Living Shoreline Water Machine: Van Cortlandt Lake

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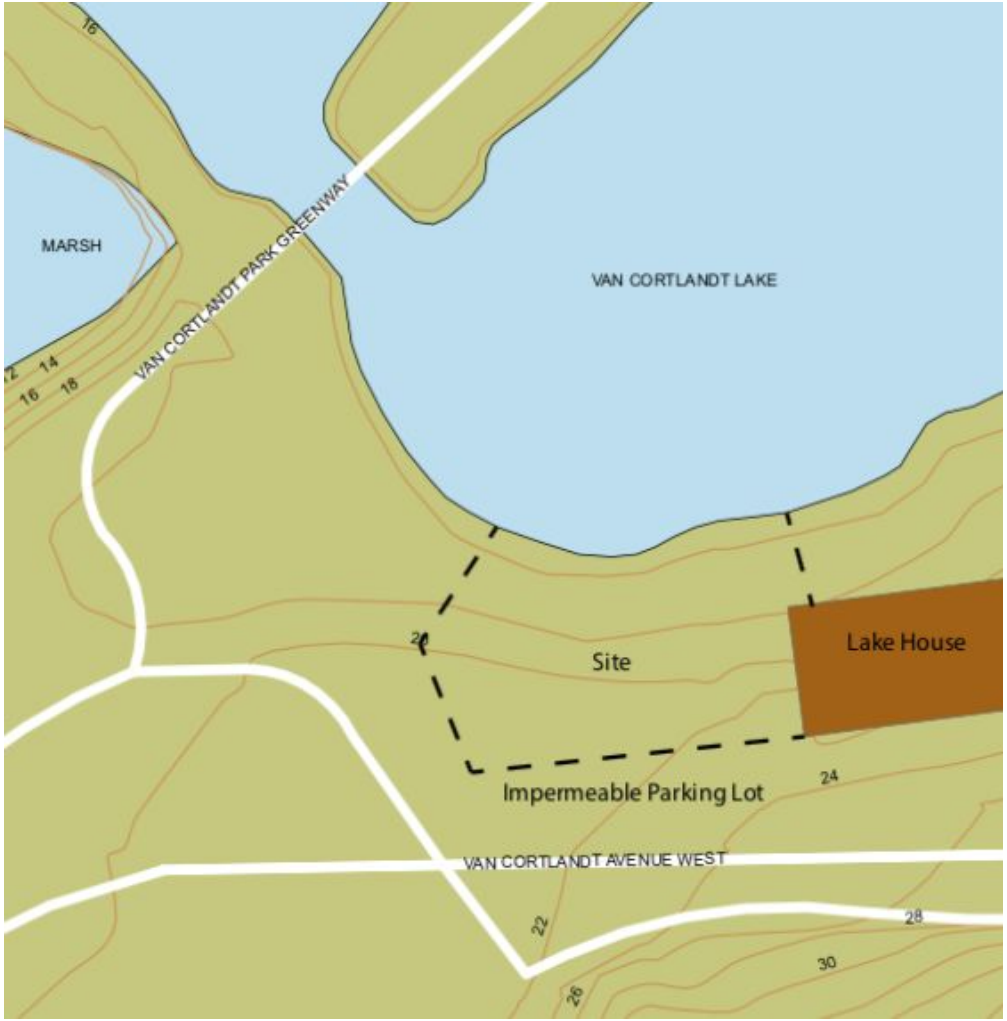
Site Location



Overview Landscape Design:

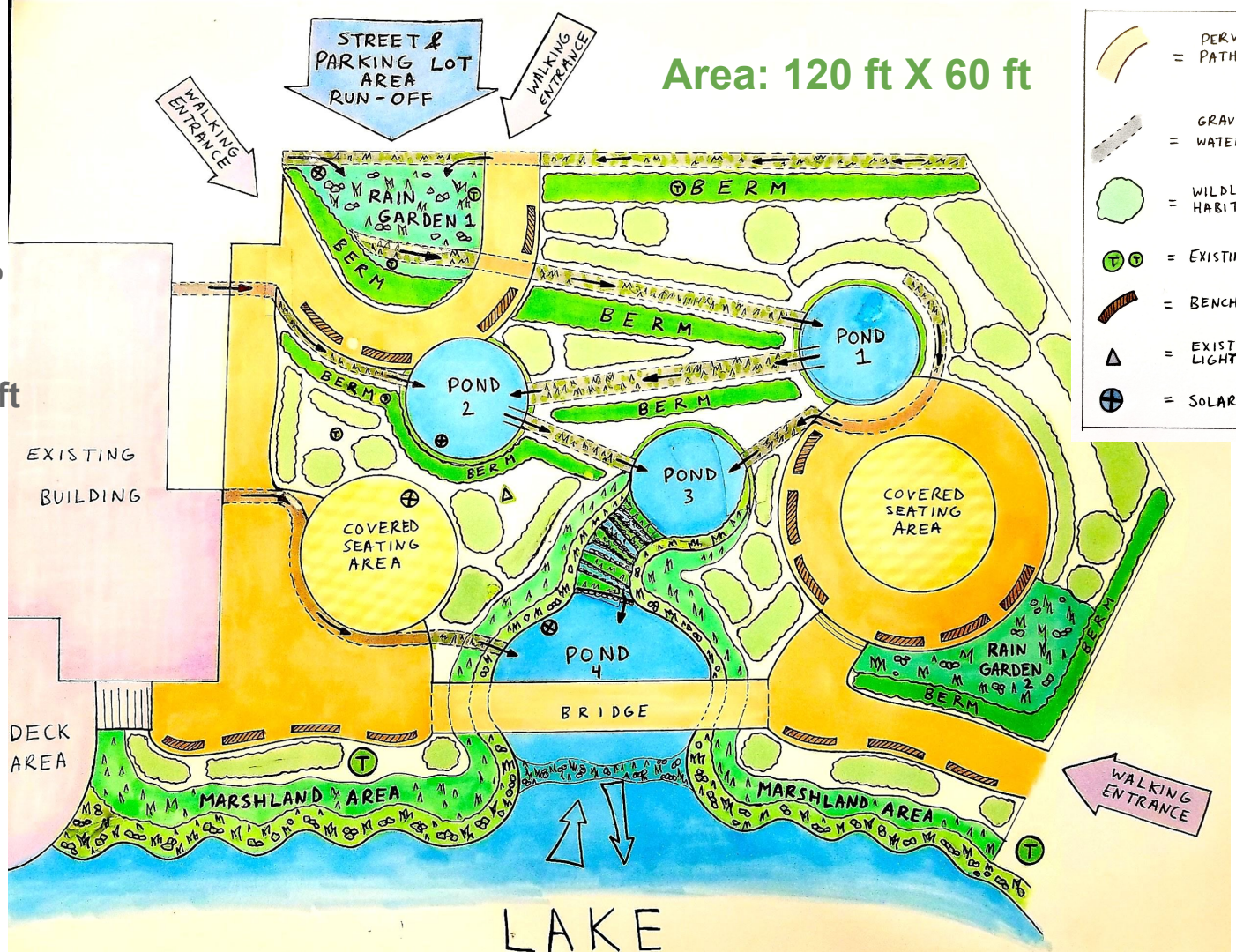
RGA Trenches = 50% void space

400 ft of RGA run + **4 ft** average depth + **5 ft** average width = **8,000 cu ft**

Divided by **50%** = **4,000 cu ft water**

4” rainstorm = **4,000 cu ft water**

(This is JUST the trenches’ capacity!)

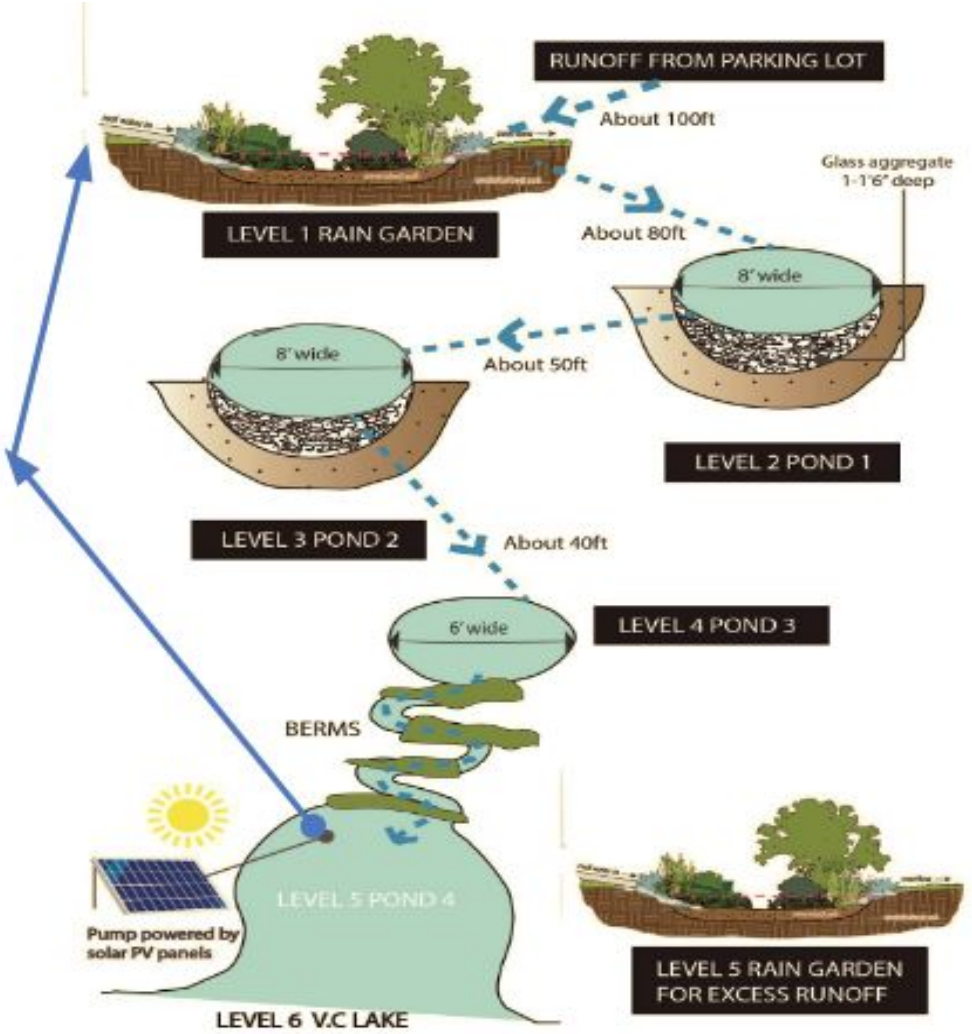


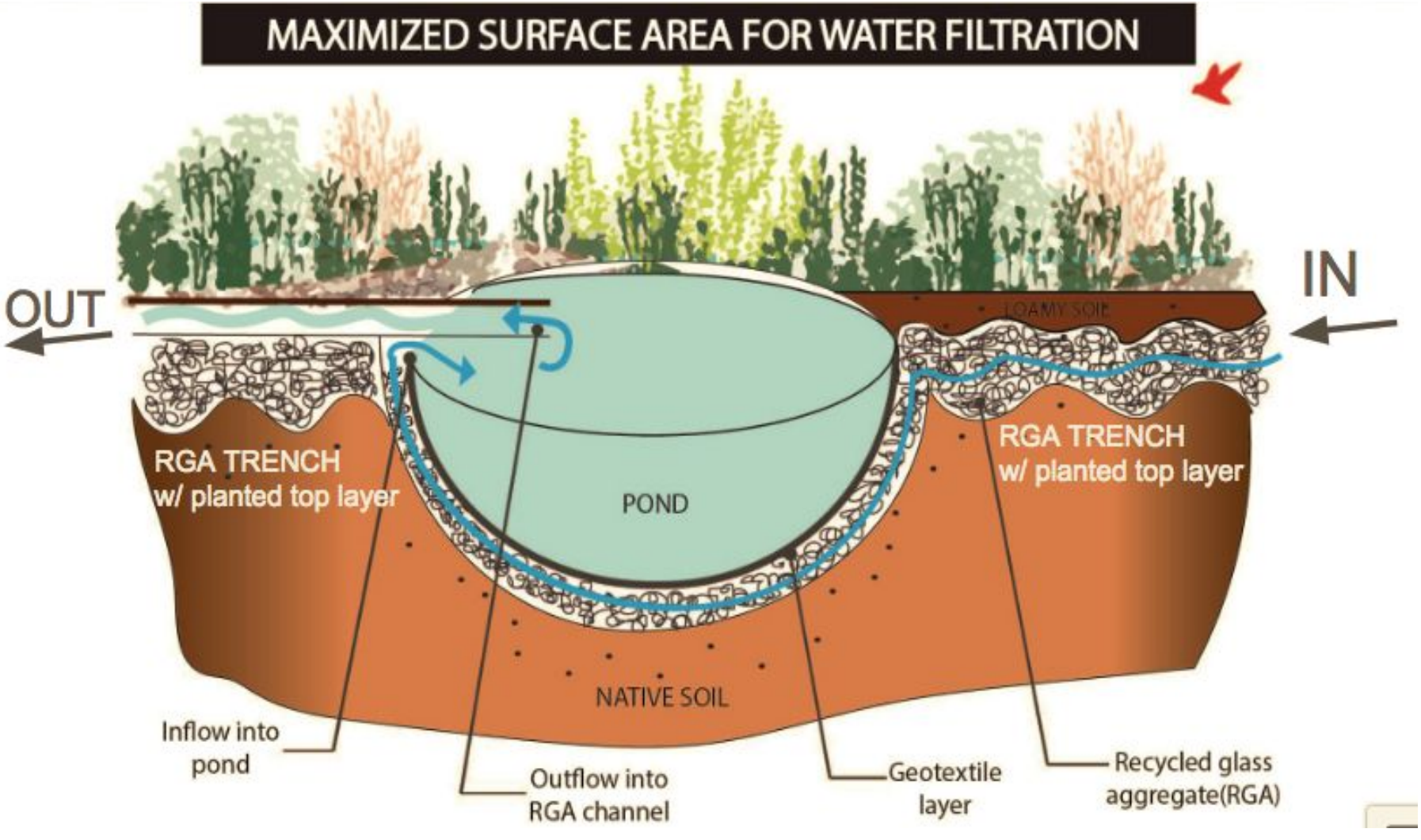
Water Flow through Pond Arrangement:

RGA trenches move water in an undulating fashion, starting from the catchment from parking lot run-off occuring in rain garden 1

Water filters through trenches and ponds to reach pond 3. Water is then slowly forced through small berm walls and wetland plants for maximized aeration.

Water is then pumped through solar pump back to rain garden 1



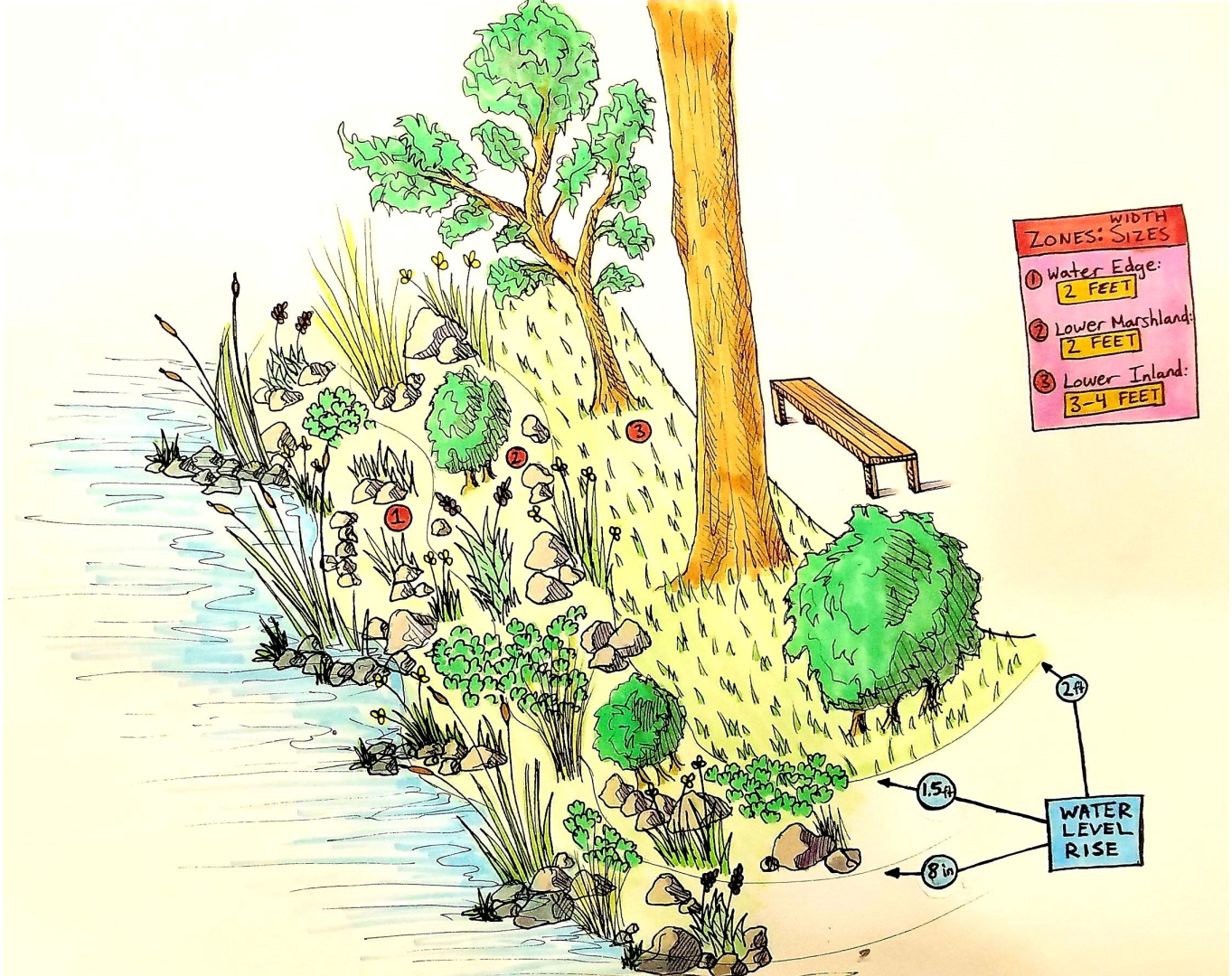

MAXIMIZED SURFACE AREA FOR WATER FILTRATION
OUT
IN
LOAMY SOIL
RGA TRENCH
w/ planted top layer
POND
RGA TRENCH
w/ planted top layer
NATIVE SOIL
Inflow into
pond
Outflow into
RGA channel
Geotextile
layer
Recycled glass
aggregate(RGA)

Lake Edge Marshland Detail:

<u>Goal:</u>
Create a living shoreline with marsh plant species:
Yellow Iris ; Blue Flag ; Cattails ; Sedges ; Rushes ; Button Rush ; Red stem & Red Bud Dogwood ; Elderwood ; Arrowhead ; Pickerel Weed ; Ferns ; & Medium-sized stones

<u>3 Zones:</u>
Water Edge = **2 ft** W
Lower Marshland = **2 ft** W
Lower Inland = **3-4 ft** W

<u>Water Rise:</u>
End of Zone 1 = **6-8 in**
End of Zone 2 = **1’5’’ in**
End of Zone 3 = **2 ft**

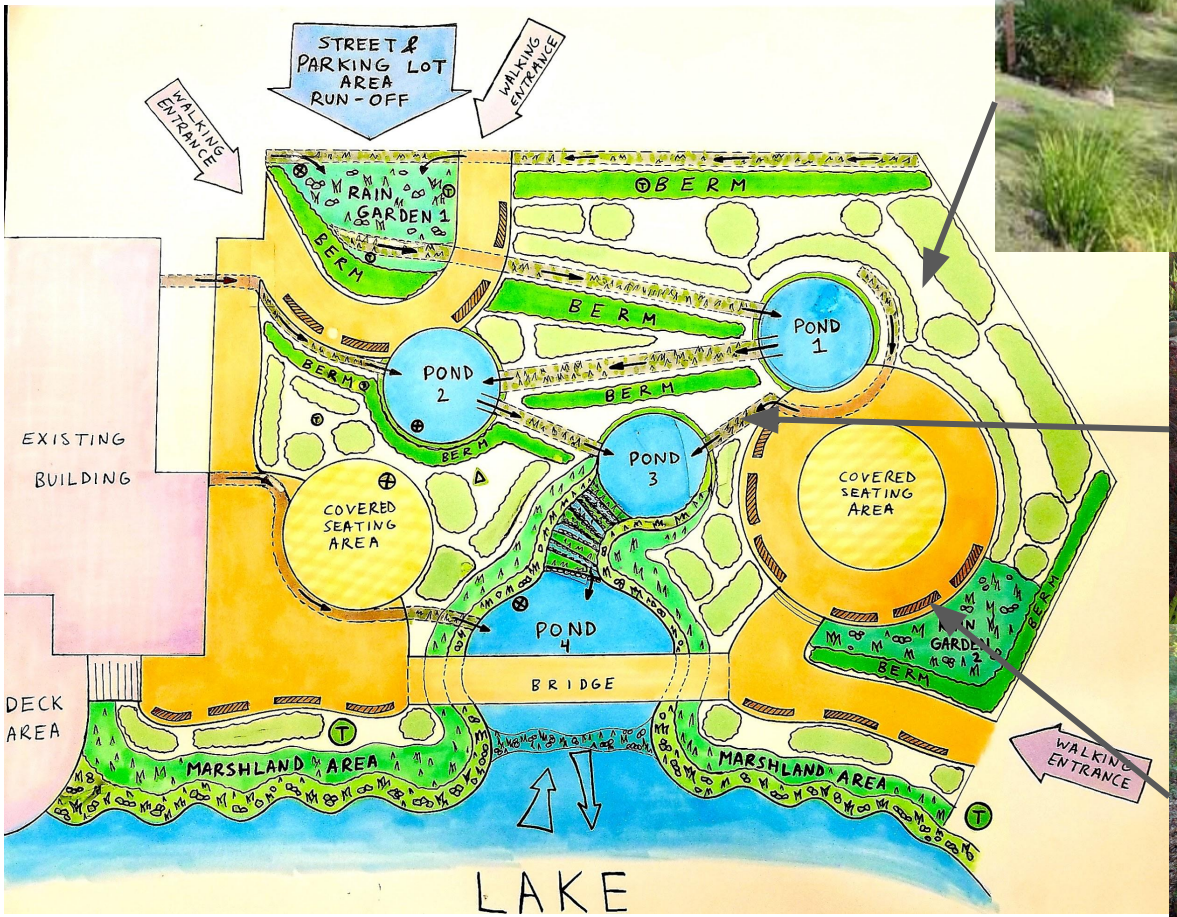


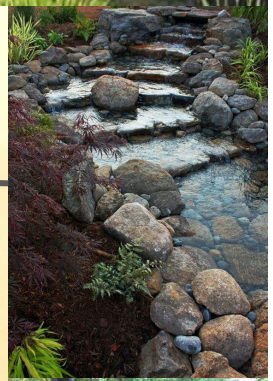
Animal Habitat Refugium:

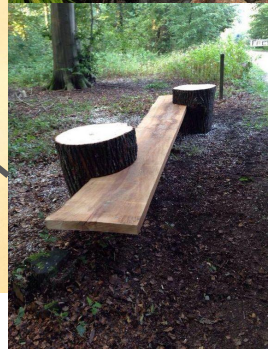
<u>Ponds:</u>
Refugium for frogs, muscles, salamanders, and other important aquatic life.

<u>Marshland Areas:</u>
Refugium for frogs, salamanders, and water species to thrive in.

<u>Remaining vegetation:</u>
Haven for birds, butterflies, and small mammals





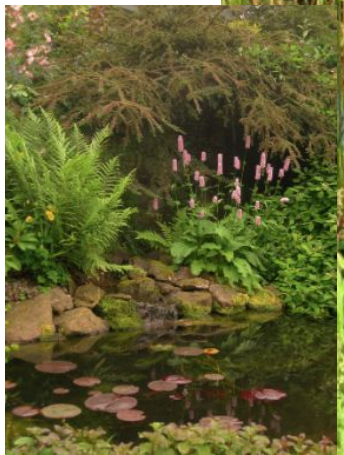


Van Cortlandt Lake Living Shoreline Vision:

Potential: **99% Water Catchment**
This system has the potential to not only filter any amount of water that would go through this space, but also to manage excess nutrient run-off control.

At the same time, we have an opportunity to create a new model for what could be done along any body of water.

Our hope is to prove that, even with a small space to work with, by cleverly creating void space and increasing the distance that water travels through the soil, RGA, and root systems, we can achieve an powerful and efficient sustainable living water machine.



LET’S GREEN THE CITY TOGETHER!